



# Behaviour of the linea alba during a curl-up task in diastasis rectus abdominis

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## Background

Rehabilitation of diastasis rectus abdominis (DRA) generally aims to reduce the inter-rectus distance (IRD). We tested the hypothesis that activation of the transversus abdominis (TrA) before a curl-up would reduce IRD narrowing, with less linea alba (LA) distortion/deformation, which may allow better force transfer between sides of the abdominal wall.

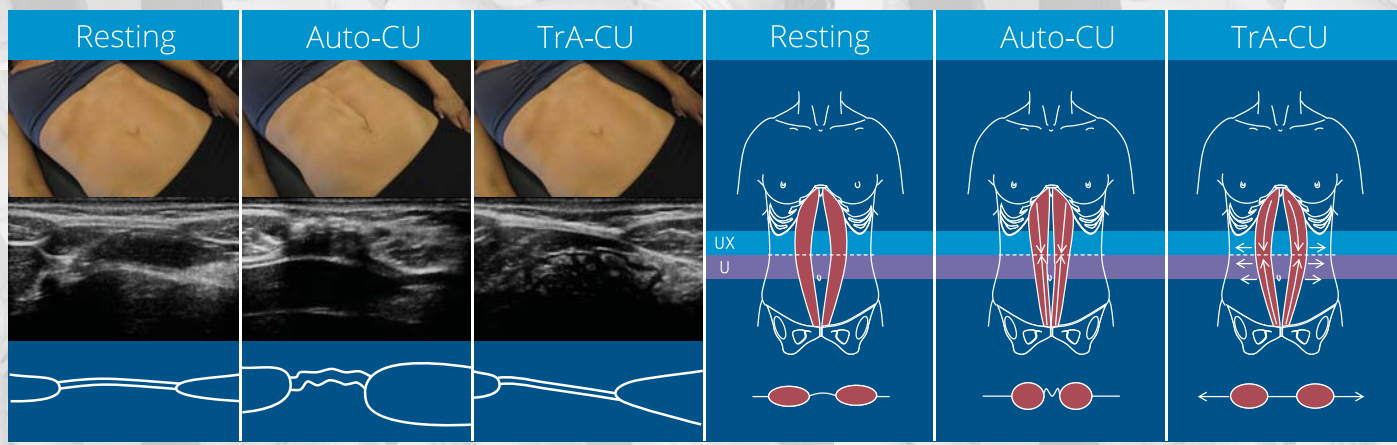


## Objectives

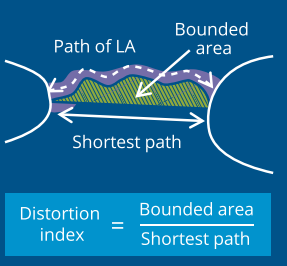
This study investigated behavior of the LA and IRD during curl-ups performed naturally and with preactivation of the TrA.

## Methods

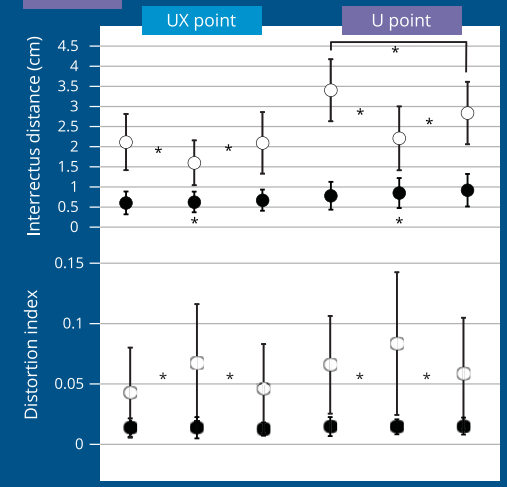
Curl-ups were performed by 26 women with DRA and 17 healthy control participants using a natural strategy (automatic curl-up) and with TrA preactivation (TrA curl-up). Ultrasound images were recorded at 2 points above the umbilicus (U point and UX point). Ultrasound measures of IRD and a novel measure of LA distortion were compared between 3 tasks (rest, automatic curl-up, TrA curl-up), between groups, and between measurement points (analysis of variance).



## Distortion Index



## Data



## • DRA Group

IRD change from rest	DI change from rest
<b>Auto-CU</b> UX = -0.51cm U = -1.19cm	<b>Auto-CU</b> UX = 0.025 U = 0.018
<b>TrA-CU</b> UX = 0.02cm U = -0.56cm	<b>TrA-CU</b> UX = -0.021 U = -0.025

## • Control Group

Inter-rectus distance (IRD) and the distortion index (DI) did not change from rest or differ between tasks for controls.

## Conclusion

In summary, these findings provide foundation to reconsider the contemporary view that reduced IRD should be the sole focus of DRA rehabilitation. Although additional work is required to validate the methods used to estimate LA properties, the data provide compelling insight into LA behaviour during a curl-up and suggest appearance of the abdominal wall and function of the abdominal muscles may be optimised by TrA activation to optimise LA tensioning, despite increased IRD.

## Funding

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